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MATP-616US

Appln. No.: 10/047,553
Amendment Dated May 3, 2007
Reply to Office Action of February 9, 2007

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Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A method of upgrading operational software in a host device having a smart card interface, the host device including a read-only memory having original software for the host device, comprising the steps of:

providing a smart card including data representing upgraded software for the host device;

interfacing the smart card with the smart card interface of the host device,

recognizing, in the host device, the smart card as including the upgraded software by accessing a card information structure (CIS) of the smart card and locating a tuple in the CIS which identifies the smart card as upgraded software;

determining if the upgraded software is compatible with the host device by comparing attributes of the upgraded software to that of the host device, the host device performing the determination of compatibility before the upgraded software is transferred from the smart card;

if the upgraded software is determined to be compatible, transferring the upgraded software from the smart card to a memory of the host device to perform the code upgrade; and

verifying the software transferred to the memory using data stored on the smart card and if the transferred software can not be verified, restoring the original software from the read-only memory.

2. Canceled.

3. (Original) A method according to claim 1, wherein the smart card includes (National Renewable Security Standard) NRSS conditional access protocols and the

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step of recognizing the smart card as including the upgraded software includes accessing application information specified by the NRSS.

4. (Original) A method according to claim 1, further wherein the host device is an open cable compliant set top box, coupled to a cable head end and includes an out of band channel for transferring data between the host compliant device and the cable head end and the method further includes the step of sending a message to the cable head end via the out of band channel to indicate that the upgraded software has been transferred to the host compliant device.

5. (Currently Amended) A smart card for providing a code upgrade to an open cable compliant host device, comprising a memory for holding upgraded software for delivery to the host device, the memory also including a card information structure (CIS) having a tuple for identifying the smart card as a code upgrade card while the host device is operating.

6. (Original) A smart card according to claim 5, wherein the memory is a flash memory.

7. (Original) A smart card according to claim 6, wherein the smart card conforms to standards adopted by one of the personal computer memory card international association (PCMCIA) and the Japan electronic industry development association (JEIDA).

8. (Original) A smart card according to claim 5, further including identification data which identifies a host compliant device for which the upgraded software is intended.

9. (Currently Amended) An open cable compliant set top box comprising:

a point of deployment (POD) interface;

a smart card, coupled to the POD interface, the smart card including a tuple located in a card information structure CIS that identifies the smart card as a POD card or a software update card;

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a read-only memory having original program data for the set top box;

a processor, coupled to the POD interface; and

a memory, coupled to the processor, the memory including:

operational software that controls the set top box; and

a bootstrap loader which is configured to control the processor to transfer program data from the POD interface to the memory to overwrite the operational software with the upgraded software; and

determining means which determines whether the upgraded software is compatible by comparing attributes of the upgraded software to that of the host device and which verifies the program data transferred by the bootstrap loader using data stored on the smart card and, if the transferred program data can not be verified, restoring the original program data from the read-only memory,

wherein the set top box determines the compatibility before the upgraded software is transferred from the POD interface to the memory.

10. (Currently Amended) An open cable compliant set top box according to claim 9, wherein ~~the smart card includes a card information structure (CIS) data which identifies the smart card as a POD card or a software update card and the memory includes~~ further software, configured to control the processor to read the CIS data.

11. (Original) An open cable compliant set top box according to claim 10, wherein the smart card conforms to standards adopted by one of the personal computer memory card international association (PCMCIA) and the Japan electronic industry development association (JEIDA).

12. (Original) An open cable compliant set top box according to claim 11, wherein:

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the smart card further includes identification data which identifies a host compliant device for which the upgraded software is intended; and

the memory further includes software that causes the processor to read the identification data from the smart card and to compare the identification data to identification data for the set top box;

whereby the processor determines if the software update is appropriate for the set-top box.

13. (Currently Amended) A method of providing a software upgrade to an open cable compliant host device coupled to a cable television (CATV) head end, the host device including a read-only memory having original software for the host device, comprising:

providing a smart card including the software upgrade for transfer to the host device;

interfacing the smart card with a POD interface of the host device;

resetting the host device;

reading and processing a tuple in the card information structure (CIS) of the smart card to identify the smart card as providing the software upgrade;

determining if the software upgrade is compatible with the host device by comparing attributes of the software upgrade to that of the host device, the host device performing the determination of compatibility before the software upgrade is read from the smart card;

if the software upgrade is determined to be compatible, reading the software upgrade of the smart card and writing the software upgrade to a memory of the compliant host device; and

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verifying the software written to the memory using data stored on the smart card and if the written software cannot be verified, restoring the original software from the read-only memory.

14. (Original) A method according to claim 13, further comprising the steps of:

determining whether the software upgrade was successful; and

sending a message to the CATV head end when the software upgrade is complete.